August 16, 2016

Tom Moe
USS Corporation
P.O. Box 417
8771 Park Ridge Dr
Mountain Iron, MN 55768

RE: Project: NPDES-Line 3 Wkly
        Pace Project No.: 1272499

Dear Tom Moe:
Enclosed are the analytical results for sample(s) received by the laboratory on August 10, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Melisa M Woods
melisa.woods@pacelabs.com
Project Manager

Enclosures

cc: Cory Hertling
      Terri Sabetti, NTS

REPORT OF LABORATORY ANALYSIS

CERTIFICATIONS

Project: NPDES-Line 3 Wkly

Pace Project No.: 1272499

Virginia Minnesota Certification ID's

315 Chestnut Street, Virginia, MN 55792

Alaska Certification #MN01084

Arizona Department of Health Certification #AZ0785

Minnesota Dept of Health Certification #: 027-137-445

North Dakota Certification: # R-203

Wisconsin DNR Certification # : 998027470

WA Department of Ecology Lab ID# C1007

Nevada DNR #MN010842015-1

Oklahoma Department of Environmental Quality

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: NPDES-Line 3 Wkly

Pace Project No.:   1272499

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1272499001	**WS-002 Scrubber Make-up**	Water	08/10/16 08:50	08/10/16 16:55
1272499002	**WS-003 Thickner Overflow**	Water	08/10/16 08:40	08/10/16 16:55

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: NPDES-Line 3 Wkly
Pace Project No.: 1272499

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1272499001	**WS-002 Scrubber Make-up**	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V
1272499002	**WS-003 Thickner Overflow**	EPA 200.7	MAR	3	PASI-V
		EPA 300.0	CSD	1	PASI-V

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: NPDES-Line 3 Wkly

Pace Project No.: 1272499

Sample: WS-002 Scrubber Make-up   **Lab ID: 1272499001**   Collected: 08/10/16 08:50   Received: 08/10/16 16:55   Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered		Analytical Method: EPA 200.7		Preparation Method: EPA 200.7					
Calcium, Dissolved	**99.1**	mg/L	5.0	0.29	10	08/11/16 15:03	08/12/16 10:42	7440-70-2	
Magnesium, Dissolved	**202**	mg/L	5.0	0.67	10	08/11/16 15:03	08/12/16 10:42	7439-95-4	
Total Hardness, Dissolved	**1080**	mg/L	100	50.0	10	08/11/16 15:03	08/12/16 10:42		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	**700**	mg/L	40.0	20.0	20		08/12/16 21:09	14808-79-8	

Sample: WS-003 Thickner Overflow   **Lab ID: 1272499002**   Collected: 08/10/16 08:40   Received: 08/10/16 16:55   Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 MET ICP, Lab Filtered		Analytical Method: EPA 200.7		Preparation Method: EPA 200.7					
Calcium, Dissolved	**819**	mg/L	5.0	0.29	10	08/11/16 15:03	08/12/16 10:45	7440-70-2	
Magnesium, Dissolved	**41.8**	mg/L	5.0	0.67	10	08/11/16 15:03	08/12/16 10:45	7439-95-4	
Total Hardness, Dissolved	**2220**	mg/L	100	50.0	10	08/11/16 15:03	08/12/16 10:45		
300.0 IC Anions 28 Days		Analytical Method: EPA 300.0							
Sulfate	**1610**	mg/L	40.0	20.0	20		08/12/16 22:13	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NPDES-Line 3 Wkly
Pace Project No.: 1272499

QC Batch: 90867
QC Batch Method: EPA 200.7
Associated Lab Samples: 1272499001, 1272499002

Analysis Method: EPA 200.7
Analysis Description: 200.7 MET Dissolved

METHOD BLANK: 357386   Matrix: Water
Associated Lab Samples: 1272499001, 1272499002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Calcium, Dissolved	mg/L	ND	0.50	0.029	08/12/16 09:32	
Magnesium, Dissolved	mg/L	ND	0.50	0.067	08/12/16 09:32	

LABORATORY CONTROL SAMPLE: 357387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Calcium, Dissolved	mg/L	50	53.5	107	85-115	
Magnesium, Dissolved	mg/L	50	52.9	106	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 357390   357391

Parameter	Units	1271945002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	99.4	500	500	633	627	107	106	70-130	1	20	
Magnesium, Dissolved	mg/L	209	500	500	731	727	104	104	70-130	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 357392   357393

Parameter	Units	1272023001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Calcium, Dissolved	mg/L	23.8	50	50	77.0	76.9	106	106	70-130	0	20	
Magnesium, Dissolved	mg/L	53.3	50	50	105	105	104	104	70-130	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: NPDES-Line 3 Wkly

Pace Project No.: 1272499

QC Batch:	90980	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions

Associated Lab Samples: 1272499001, 1272499002

METHOD BLANK: 357854   Matrix: Water

Associated Lab Samples: 1272499001, 1272499002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfate	mg/L	ND	2.0	1.0	08/12/16 15:25	

LABORATORY CONTROL SAMPLE: 357855

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	50	48.1	96	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 357856   357857

Parameter	Units	1271945001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	1510	1000	1000	2580	2570	107	106	90-110	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 357858   357859

Parameter	Units	1272499001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	700	1000	1000	1760	1750	106	105	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

QUALIFIERS

Project: NPDES-Line 3 Wkly

Pace Project No.:   1272499

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-V   Pace Analytical Services - Virginia

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NPDES-Line 3 Wkly
Pace Project No.: 1272499

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1272499001	WS-002 Scrubber Make-up	EPA 200.7	90867	EPA 200.7	90936
1272499002	WS-003 Thickner Overflow	EPA 200.7	90867	EPA 200.7	90936
1272499001	WS-002 Scrubber Make-up	EPA 300.0	90980		
1272499002	WS-003 Thickner Overflow	EPA 300.0	90980		

REPORT OF LABORATORY ANALYSIS

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Date: 08/16/2016 01:06 PM

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT.

WO#: 1272499

PM: MMW   Due Date: 08/24/16

CLIENT: USS CORP

1 Of 1

Pace Analytical
www.pacelabs.com

Section A
Required Client Information:

- Company: USS Corporation
- Address: P.O. Box 417
- Mt. Iron, MN 55768
- Email:
- Phone:
- Fax:
- Requested Due Date:

Section B
Required Project Information:

- Report To: Tom Moe
- Copy To:
- Purchase Order #:
- Project Name: NPDES-LINE 3 Wkly
- Project #:

Section C
Invoice Information:

- Attention:
- Company Name:
- Address:
- Pace Quote:
- Pace Project Manager: heather.zika@pacelabs.com

Pace Profile #:

SAMPLE ID
One Character per box.
(A-Z, 0-9, . , -)
Sample Ids must be unique

MATRIX / CODE
- Drinking Water — DW
- Water — WT
- Waste Water — WW
- Product — P
- Soil/Solid — SL
- Oil — OL
- Wipe — WP
- Air — AR
- Other — OT
- Tissue — TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	LAB FILTERED: SO4	Lab FILTERED: Ca,Mg,Hard	Residual Chlorine (Y/N)
1	WS-002 Scrubber Make-Up	WT		87016	08.50	87016	08.50										X	X	LF LF
2	WS-003 Thickner Overflow	WT		87016	08.40	87016	08.40										X	X	LF LF
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

OF CONTAINERS — Preservatives

Analyses Test — Y/N

Requested Analysis Filtered (Y/N)

Regulatory Agency — State / Location

ADDITIONAL COMMENTS:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
(signature)	87016	16:55	(signature)	8-10-16	1655	

SAMPLER NAME AND SIGNATURE:

- PRINT Name of SAMPLER: Paul Worth
- SIGNATURE of SAMPLER: (signature)
- DATE Signed: 87016

	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	1.0	Y	N	Y

Sample Condition Upon Receipt

Client Name: **USS CORP**

Project #: **WO#: 1272499**

1272499

Courier: ☐Fed Ex ☐UPS ☐USPS ☒Client
☐Commercial ☐Pace ☐Other:_____

Tracking Number: _____

Custody Seal on Cooler/Box Present? ☒Yes ☐No   Seals Intact? ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐Bubble Wrap ☐Bubble Bags ☐None ☒Other:_____   Temp Blank? ☒Yes ☐No

Thermometer Used: ☒ 140792808   Type of Ice: ☐Wet ☐Blue ☐None ☒Samples on ice, cooling process has begun

Cooler Temp Read °C: **0.7**   Cooler Temp Corrected °C: **1.0**   Biological Tissue Frozen? ☐Yes ☐No ☒NA
Temp should be above freezing to 6°C   Correction Factor: **+0.3**   Date and Initials of Person Examining Contents: **Tay BLC 8-11-16**
Comments:

Chain of Custody Present?	☒Yes	☐No	☐N/A	1.
Chain of Custody Filled Out?	☒Yes	☐No	☐N/A	2.
Chain of Custody Relinquished?	☒Yes	☐No	☐N/A	3.
Sampler Name and Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No	☐N/A	5. TP 8-11-16
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No	☒N/A	6.
Rush Turn Around Time Requested?	☐Yes	☒No	☐N/A	7.
Sufficient Volume?	☒Yes	☐No	☐N/A	8.
Correct Containers Used?	☒Yes	☐No	☐N/A	9.
-Pace Containers Used?	☒Yes	☐No	☐N/A	
Containers Intact?	☒Yes	☐No	☐N/A	10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☒No	☐N/A	11. Note if sediment is visible in the dissolved containers.
Sample Labels Match COC?	☒Yes	☐No	☐N/A	12.
-Includes Date/Time/ID/Analysis Matrix: **WT**				
All containers needing acid/base preservation will be checked and documented in the pH logbook.	☐Yes	☒No	☐N/A	See pH log for results and additional preservation documentation
Headspace in Methyl Mercury-Container	☐Yes	☐No	☒N/A	13.
Headspace in VOA Vials (>6mm)?	☐Yes	☐No	☒N/A	14.
Trip Blank Present?	☐Yes	☐No	☒N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION   Field Data Required? ☐Yes ☐No

Person Contacted: _____   Date/Time: _____

Comments/Resolution: _____

_____

_____

_____

FECAL WAIVER ON FILE   Y N   TEMPERATURE WAIVER ON FILE   Y N

Project Manager Review: _____ for drawn   Date: **8-11-16**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office. (Page 1 of 1) hold, incorrect preservative, out of temp, incorrect containers)